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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,236	10/03/2003	You-Hua Chou	N1085-00134 TSMC2002-104	2013

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EXAMINER	
THOMAS, ERIC W	

ART UNIT	PAPER NUMBER
2831	

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/678,236	CHOU ET AL.	
	Examiner	Art Unit	
	Eric W Thomas	2831	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/3/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/03, 1/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-9, 12-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ng et al. (US 5,583,359).

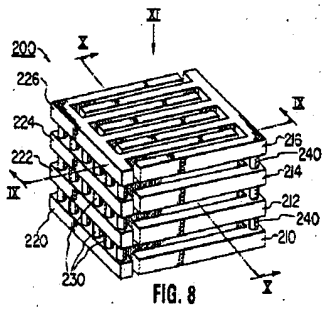


FIG. 8

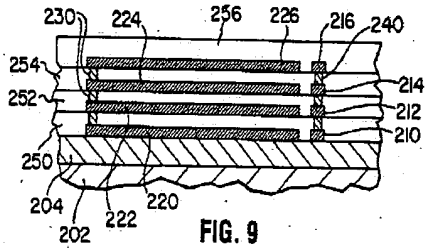


FIG. 9

Ng et al. disclose in fig. 8, and 9, a capacitor (200) comprising: an electrically conductive plate (222); an electrically conductive segmented plate (214, 224) defining at least two electrically conductive plate segments; a first capacitor dielectric (252) disposed between the plate and the segmented plate, at least one electrically conductive interconnect (230) coupling one of the at least two plate segments to the plate; and a second capacitor dielectric (254) disposed between the at least two plate segments.

Regarding claim 4, Ng. et al. disclose the second capacitor dielectric has a high dielectric constant (col. 9 lines 3-15).

Regarding claim 5, Ng et al. disclose the at least two plate segments form a lateral capacitor.

Regarding claim 6, Ng et al. disclose the at least one electrically conductive interconnect extends through the first capacitor dielectric.

Regarding claim 7, Ng et al. disclose the plate and one of the at least two plate segments are each of a first electrical bias, and the other of the at least two plate segments is of a second electrical bias opposite to the first electrical bias.

Regarding claim 8, Ng et al. disclose the capacitor comprises a metal-insulator-metal capacitor.

Regarding claim 9, Ng et al. disclose in fig. 8, and 9, a capacitor (200) comprising: an electrically conductive plate (222); an electrically conductive segmented plate (214, 224) defining a first plurality of electrically conductive plate segments and a second plurality of electrically conductive plate segments; a first capacitor dielectric (252) disposed between the plate and the segmented plate; at least one electrically conductive interconnect (230) coupling each of the plate segments of one of the first and second plurality of plate segments to the plate; and a second capacitor dielectric (254) disposed between the plate segments .

Regarding claim 12, Ng et al. disclose the second capacitor dielectric has a high dielectric constant (col. 9 lines 3-15).

Regarding claim 13, Ng et al. disclose the first and second plurality of segments form lateral capacitors.

Regarding claim 14, Ng et al. disclose the first plurality of plate segments alternate with the second plurality of plate segments.

Regarding claim 15, Ng et al. disclose the at least one electrically conductive interconnects extend through the ~~first~~ first capacitor dielectric. ET 5/15/04

Regarding claim 16, Ng et al. disclose the plate and one of the first and second plurality of plate segments are each of a first electrical bias, and the other one of the first and second plurality of plate segments are of a second electrical bias opposite the first electrical bias.

Regarding claim 17, Ng et al. disclose the capacitor comprises a metal-insulator-metal capacitor.

Regarding claim 18, Ng et al. disclose a method of fabricating a capacitor, comprising forming an electrically conductive plate (222); forming a first capacitor dielectric over the plate (252); forming at least one via (230) in the first capacitor dielectric; forming an electrically conductive segmented plate (214, 224) over the first capacitor dielectric, the segmented plate defining at least two electrically conductive plate segments, the at least one via electrically coupling one of the at least two plate segments to the plate; and forming a second capacitor dielectric (254) between the at least two plate segments.

Regarding claim 19, Ng et al. disclose the capacitor comprises a metal-insulator-metal capacitor.

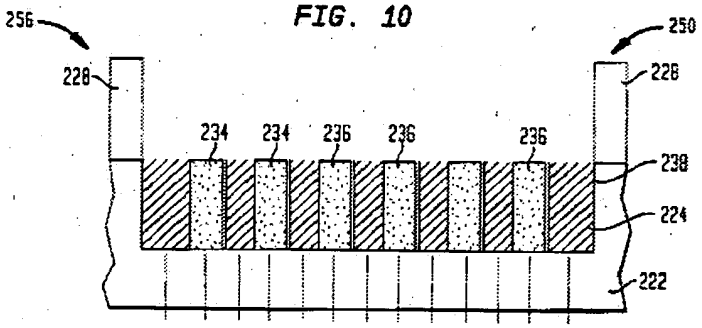
Regarding claim 20, Ng et al. disclose a method of fabricating a capacitor, comprising: forming an electrically conductive plate (222); forming a first capacitor

dielectric (252) over the plate; forming a plurality of vias (230) in the first capacitor dielectric; forming an electrically conductive segmented plate (214, 224) over the first capacitor dielectric, the segmented plate defining a first plurality of electrically conductive plate segments and a second plurality of electrically conductive plate segments, the vias electrically coupling the conductive plate segments of one of the first and second plurality of plate segments to the plate; and forming a second capacitor dielectric (254) between the plate segments.

Regarding claim 21, Ng et al. disclose the capacitor comprises a metal-insulator-metal capacitor.

3. Claims 1-6, 8-15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ning (US 6,451,667).

FIG. 10



Ning discloses in fig. 10, a capacitor (256) comprising: an electrically conductive plate (256); an electrically conductive segmented plate (224, 236) defining at least two electrically conductive plate segments; a first capacitor dielectric (222) disposed between the plate and the segmented plate, at least one electrically conductive interconnect (252) coupling one of the at least two plate segments to the plate; and a second capacitor dielectric (234) disposed between the at least two plate segments.

Regarding claim 2, Ning discloses one (236) of the at least two electrically conductive plate segments is thinner than the other one.

Regarding claim 3, Ning discloses the thinner plate segment is coupled to the plate by the at least one interconnect.

Regarding claim 4, Ning discloses the second capacitor dielectric has a high dielectric constant (col. 4 lines 60-62).

Regarding claim 5, Ning discloses the at least two plate segments form a lateral capacitor.

Regarding claim 6, Ning discloses the at least one electrically conductive interconnect extends through the first capacitor dielectric.

Regarding claim 8, Ning discloses the capacitor comprises a metal-insulator-metal capacitor.

Regarding claim 9 Ning discloses in fig. 10, a capacitor (256) comprising: an electrically conductive plate (256); an electrically conductive segmented plate (224,236) defining a first plurality of electrically conductive plate segments and a second plurality of electrically conductive plate segments; a first capacitor dielectric (222) disposed between the plate and the segmented plate; at least one electrically conductive interconnect (252) coupling each of the plate segments of one of the first and second plurality of plate segments to the plate; and a second capacitor dielectric (234) disposed between the plate segments .

Regarding claim 10, Ning discloses the plate segments of one fo the first and second plurality of electrically conductive plate segments are thinner than the plate segments of the other one.

Regarding claim 11, Ning discloses the thinner plate segments are coupled to the plate by the at least one interconnect.

Regarding claim 12, Ning discloses the second capacitor dielectric has a high dielectric constant (col. 4 lines 60-62).

Regarding claim 13, Ning discloses the first and second plurality of segments form lateral capacitors.

Regarding claim 14, Ning discloses the first plurality of plate segments alternate with the second plurality of plate segments.

Regarding claim 15, Ning discloses the at least one electrically conductive interconnects extend through the ~~fist~~ First capacitor dielectric. vr 5/11/04

Regarding claim 17, Ning discloses the capacitor comprises a metal-insulator-metal capacitor.

Conclusion

In order to ensure full consideration of any amendments, affidavits, or declaration, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116 which will be strictly enforced.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (571) 272-1985. The examiner can normally be reached on M, T, Sa 9:00AM - 9:30PM; W, Th, F 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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